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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARK S. TRACY and EART W. MOORE

Appeal 2015-002958[1]
Application 13/201,243[2]
Technology Center 3700

Before ANTON W. FETTING, CYNTHIA L. MURPHY, and KENNETH G. SCHOPFER, *Administrative Patent Judges*.

SCHOPFER, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

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[1] Our decision references the Appeal Brief ("Appeal Br.," filed Sept. 29, 2014) and Reply Brief ("Reply Br.," filed Jan. 20, 2015), and the Examiner's Answer ("Ans.," mailed Nov. 18, 2014) and Final Office Action ("Final Act.," mailed Mar. 21, 2014).

[2] According to Appellants, "[t]he real party in interest is Hewlett-Packard Development Company, LP, ["HPDC"]. . . a wholly-owned affiliate of Hewlett-Packard Company . . . [and t]he general or managing partner of HPDC is HPQ Holdings, LLC." Appeal Br. 1.

BACKGROUND

According to Appellants, the Specification discloses a "system for cooling a heat producing device." Spec. ¶ 2.

CLAIMS

Claims 1–20 are on appeal. Claim 1 is illustrative of the appealed claims and recites:

> 1. A heat exchange system comprising:
>
> an air mover wherein at least a portion of the air mover discharge airflow is directed radially outward;
>
> a thermal conduit;
>
> a thermal member having a first surface, a second surface and at least one integrally formed heat exchange surface integrally formed as a single unitary body with the first surface and the second surface;
>
> wherein at least a portion of the heat exchange surface is at least partially disposed in the air mover discharge airflow;
>
> wherein at least a portion of the first surface is disposed proximate the thermal conduit; and
>
> wherein at least a portion of the second surface is disposed proximate the air mover.

Appeal Br. 26.

REJECTIONS

1. The Examiner rejects claim 10 under 35 U.S.C. § 112, second paragraph, as indefinite.
2. The Examiner rejects claims 1, 2, 4, 6, 7, 11, and 13 under 35 U.S.C. § 102(e) as anticipated by Wang.[3]

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[3] Wang et al., US 2009/0211737 A1, pub. Aug. 27, 2009.

3. The Examiner rejects claim 1 under 35 U.S.C. § 102(e) as anticipated by Ishikawa 540.[4]
4. The Examiner rejects claims 3 and 12 under 35 U.S.C. § 103(a) as unpatentable over Wang in view of Hsieh.[5]
5. The Examiner rejects claims 5, 14, and 15 under 35 U.S.C. § 103(a) as unpatentable over Wang in view of Ishikawa 426.[6]
6. The Examiner rejects claims 8–10 under 35 U.S.C. § 103(a) as unpatentable over Wang in view of Ishikawa 426 and Yu.[7]
7. The Examiner rejects claims 16–19 under 35 U.S.C. § 103(a) as unpatentable over Ishikawa 540 and Liu.[8]
8. The Examiner rejects claim 20 under 35 U.S.C. § 103(a) as unpatentable over Ishikawa 540 and Yu.

DISCUSSION

Indefiniteness

Appellants do not address the rejection of claim 10 under 35 U.S.C. § 112, second paragraph, in their briefs. Accordingly, we summarily sustain this rejection.

Anticipation

Independent claim 1 recites, *inter alia*, "a thermal member having a first surface, a second surface and at least one integrally formed heat exchange surface integrally formed as a single unitary body with the first surface and the second surface" and independent claim 11 similarly recites,

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[4] Ishikawa, US 6,650,540 B2, iss. Nov. 18, 2003.
[5] Hsieh et al., US 2009/0133855 A1, pub. May 28, 2009.
[6] Ishikawa, US 2009/0046426 A1, pub. Feb. 19, 2009.
[7] Yu et al., US 6,362,958 B1, iss. Mar. 26, 2002.
[8] Liu, US 6,262,893 B1, iss. July 17, 2001.

inter alia, "a planar thermal member having a first surface, a second surface and at least one integral heat exchange surface integrally formed as part of a single unitary body with the first surface and the second surface." *See* Appeal Br. 26, 29. The dispositive issue with respect to each of the anticipation rejections on appeal regards the broadest reasonable interpretation of the phrase "integrally formed as part of a single unitary body." Appellants' contend that this phrase requires that the thermal member be a single piece structure. *See* Appeal Br. 9–12. In contrast, the Examiner finds that this phrase does not limit the claimed structure to one-piece members and that the broadest reasonable construction of the claim allows for thermal members comprising multiple pieces. *See* Final Act. 5–6, 24; *see also* Ans. 24–26.

We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims "their broadest reasonable interpretation consistent with the specification" and "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Here, we agree with Appellants that the broadest reasonable interpretation of the claims in light of the Specification would require a thermal member that has only one piece. In particular, we agree that the Examiner "dissect[s] the claim limitation 'integrally formed as a single unitary body' and [then] attack[s] each dissected portion," which ignores the meaning of the phrase as a whole. Thus, although the definitions of the terms taken individually might indicate a structure including more than one piece, we find that the plain language taken as a whole would be interpreted by a person of ordinary skill in the art to require a one-piece structure. To

find otherwise, would render much of the language in the phrase superfluous. *Bicon Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) ("[C]laims are interpreted with an eye toward giving effect to all terms in the claim."); *see also Stumbo v. Eastman Outdoors, Inc.*, 508 F.3d 1358, 1362 (Fed. Cir. 2007) (denouncing claim constructions which render phrases in claims superfluous); *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (rejecting a proposed claim construction that would render claim terms superfluous).

Further, we agree with Appellants that requiring a one-piece structure is consistent with the Specification. The Examiner maintains that the Specification fails to "explicitly forbid[] the combination of multiple parts" and "provides inconsistent meaning to the claim language" by indicating that the thermal member may be a combination of parts. Ans. 25–26. We are not persuaded of any inconsistency by the fact that the Specification includes embodiments that have multiple parts. We see no indication in the portions of the Specification cited by the Examiner that the embodiments including a combination of parts may be said to include a thermal member with a heat exchange surface that is "integrally formed as a single unitary body." In fact, the language in the Specification most closely resembling the claim language states that "the heat exchange surface 150 can be integral, cast, or fabricated as a single unit with the thermal member 130, *i.e.* as a unitary component of the thermal member 130." Spec. ¶ 35. This language may be contrasted with the language in the Specification describing the attachment of the thermal conduit 120 to the thermal member 130. *See* Spec. ¶ 30. In particular, the Specification states that the thermal member 120 may be detachably or permanently attached to the thermal member and that

permanent attachment means include "soldering, welding, brazing, or the like." *Id.* The Specification does not indicate that either detachable or permanent attachment would result in a thermal conduit and thermal member that are considered integrally formed to create a single unit. Further, each of these descriptions are provided with respect to Figure 1, which depicts the thermal member and heat exchanger as a single piece with a separate thermal conduit attached thereto.

Accordingly, we find that a person of ordinary skill in the art would conclude, in light of the Specification and the totality of the claim language itself, that the claim language at issue refers to a thermal member and heat exchanger that are formed as a single piece.

In light of this claim interpretation, we will not sustain either anticipation rejection before us. In rejecting independent claims 1 and 11, the Examiner relies on the casing for fan 220 and the fin assembly 200 of Wang as the combined thermal member. Final Act. 4–5. However, the Examiner acknowledges, and we agree, that the casing for fan 220 and the fin assembly are not formed as a single piece. Thus, Wang fails to disclose a "heat exchange surface integrally formed as a single unitary body with the first surface and the second surface" of the thermal member, as required by claim 1 and as similarly required by claim 11.

With respect to the rejection of claim 1 over Ishikawa 540, the Examiner relies on fan casing 30 as the thermal member and heat sink 18 as the combined thermal member as claimed. Final Act. 10–11. However, the Examiner acknowledges, and we agree, that the fan casing and heat sink assembly are not formed as a single piece. Thus, Ishikawa 540 fails to disclose a "heat exchange surface integrally formed as a single unitary body

with the first surface and the second surface" of the thermal member, as required by claim 1

Based on the foregoing, we do not sustain the anticipation rejection of claims 1, 2, 4, 6, 7, 11, and 13 over Wang or the anticipation rejection of claim 1 over Ishikawa 540.

Obviousness

Claims 3, 5, 12, and 14–20 each depend from one of independent claims 1 or 11. With respect to the rejections of each of these claims, the Examiner relies on the findings noted above that each of Wang and Ishikawa 540 disclose a thermal member with an integrally formed heat exchange surface as claimed. *See* Final Act. 12–24. Because we conclude that the these findings are in error and because the Examiner does not otherwise explain why the use of a one-piece structure for the thermal member would have been obvious in view of the art of record, we will not sustain the rejections of claims 3, 5, 12, and 14–20.

With respect to claims 8–10, independent claim 8 includes the limitation

> transferring at least a portion of the conveyed heat from the thermal conduit to a thermal member comprising a metallic member having a first surface, a second surface, at least one exterior edge, and at least one integral heat exchange surface integrally formed as part of a single unitary body with the first surface and the second surface.

Appeal Br. 28. For the reasons discussed above, we interpret this claim limitation to require transferring heat to a one-piece thermal member as similarly required by claim 1. As with the anticipation rejection over Wang, the Examiner's rejection of claims 8–10 relies on the erroneous finding that Wang discloses a thermal member as claimed. Final Act. 16. We find that

the Examiner erred in making this finding for the same reasons discussed above with respect to claim 1. Because the Examiner does not otherwise explain why the use of a one-piece structure for the thermal member would have been obvious in view of the art of record, we will not sustain the rejection of claims 8–10.

CONCLUSION

We AFFIRM the rejection of claim 10 under 35 U.S.C. § 112, second paragraph, as indefinite.

We REVERSE the rejection of claims 1, 2, 4, 6, 7, 11, and 13 under 35 U.S.C. § 102(e) as anticipated by Wang.

We REVERSE the rejection of claim 1under 35 U.S.C. § 102(e) as anticipated by Ishikawa 540.

We REVERSE the rejection of claims 3 and 12 under 35 U.S.C. § 103(a) as unpatentable over Wang in view of Hsieh.

We REVERSE the rejection of claims 5, 14, and 15 under 35 U.S.C. § 103(a) as unpatentable over Wang in view of Ishikawa 426.

We REVERSE the rejection of claims 8–10 under 35 U.S.C. § 103(a) as unpatentable over Wang in view of Ishikawa 426 and Yu.

We REVERSE the rejection of claims 16–19 under 35 U.S.C. § 103(a) as unpatentable over Ishikawa 540 and Liu.

We REVERSE the rejection of claim 20 under 35 U.S.C. § 103(a) as unpatentable over Ishikawa 540 and Yu.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART